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NOTES ON *CERCOPITHECUS HAMLYNI* POCOCK

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This rare monkey has been the subject of much misunderstanding. Originally described by Pocock (1907, Ann. Mag. Nat. Hist., (7) XX, p. 521), from an immature, captive animal, redescribed by Thomas and Wroughton (1910, Trans. Zool. Soc. London XIX, p. 485) as *Cercopithecus leucampyx aurora* from a native skin, without face, it was made the type of a new genus, *Rhinostigma*, by Elliot (1912, Review of the Primates, II, p. 273). Elliot based his genus on the external characters of *Cercopithecus hamlyni* and the cranial characters of an immature *Cercocebus*, under the impression that the skull belonged with the skin. This error was rectified by Pocock (1925, Ann. Mag. Nat. Hist., (9) XVI, pp. 264–268), but the facts appeared in print too late to prevent Allen from including Elliot's mistake in the report on the primates collected by the American Museum Congo Expedition (1925, Bull. Amer. Mus. Nat. Hist., XLVII, pp. 348–349). Allen, on the basis of a young specimen with milk dentition and first permanent molars, considered "*Rhinostigma*" to be "related to the *Lophocebus* section of *Cercocebus*."

Since the Congo Expedition, several specimens of *C. hamlyni* have been secured by the Musée du Congo Belge, Tervueren, Belgium (Schouteden, H., 1934, Rev. Zool. Afr., XXIV, Cerc. Zool. Cong., pp. 61–62, 86–87; idem, XXV, Cerc. Zool. Cong., pp. 291–304). The New York Zoological Society has an adult male specimen on exhibition. No skulls of wild adult animals have been reported or described, and because skulls of captive primates are invariably modified by diet and disease, it seems desirable to report on two skulls of *Cercopithecus hamlyni* (adult males, one with skin) in the collections of the American Museum.

The first of these specimens (AMNH 86948) was found in an advanced state of decay near the summit of Mount Karisimbi, altitude 14,800 feet, June, 1927, by Dr. James P. Chapin, Ruwenzori-Kivu Expedition. A photograph of the mummified head, showing the diagnostic white nose-stripe, was published in 1936 (Rev. Zool. Afr., XXIX, Cerc. Zool. Cong., p. 107).

The second specimen, skin and skull (AMNH 90028), was collected in the forest near Mount Kahusi, west of the south end of Lake Kivu, September 7, 1929, by the senior author, while with the Columbia University-American Museum African Expedition.

"When discovered the animal was in a fairly large forest tree, one of a small group of such trees nearly surrounded by bamboo forest through which we had been walking for some time. Farther on, toward Mount Kahusi, we passed through more bamboos, grassland and mountain forest. This fine adult male, as far as could be ascertained, was solitary.

"The photographs of the specimen were made a short time after it was killed and with the pelage arranged naturally. The sexual skin of the scrotum was a very bright light blue in color." (Notes of the collector, made at the time.)

Cranially the monkeys of the genus *Cercopithecus* are highly variable, quite comparable in this respect to *Colobus*, the variations of which are discussed and figured in Allen's report (*op. cit.*, pp. 445–472, Pls. CXII–CLI). However, the species-groups can be characterized cranially to allow the identification of a large majority of skulls without skins or mismatched, at least as regards the group. Species within a group often cannot be separated satisfactorily, except by external characters.

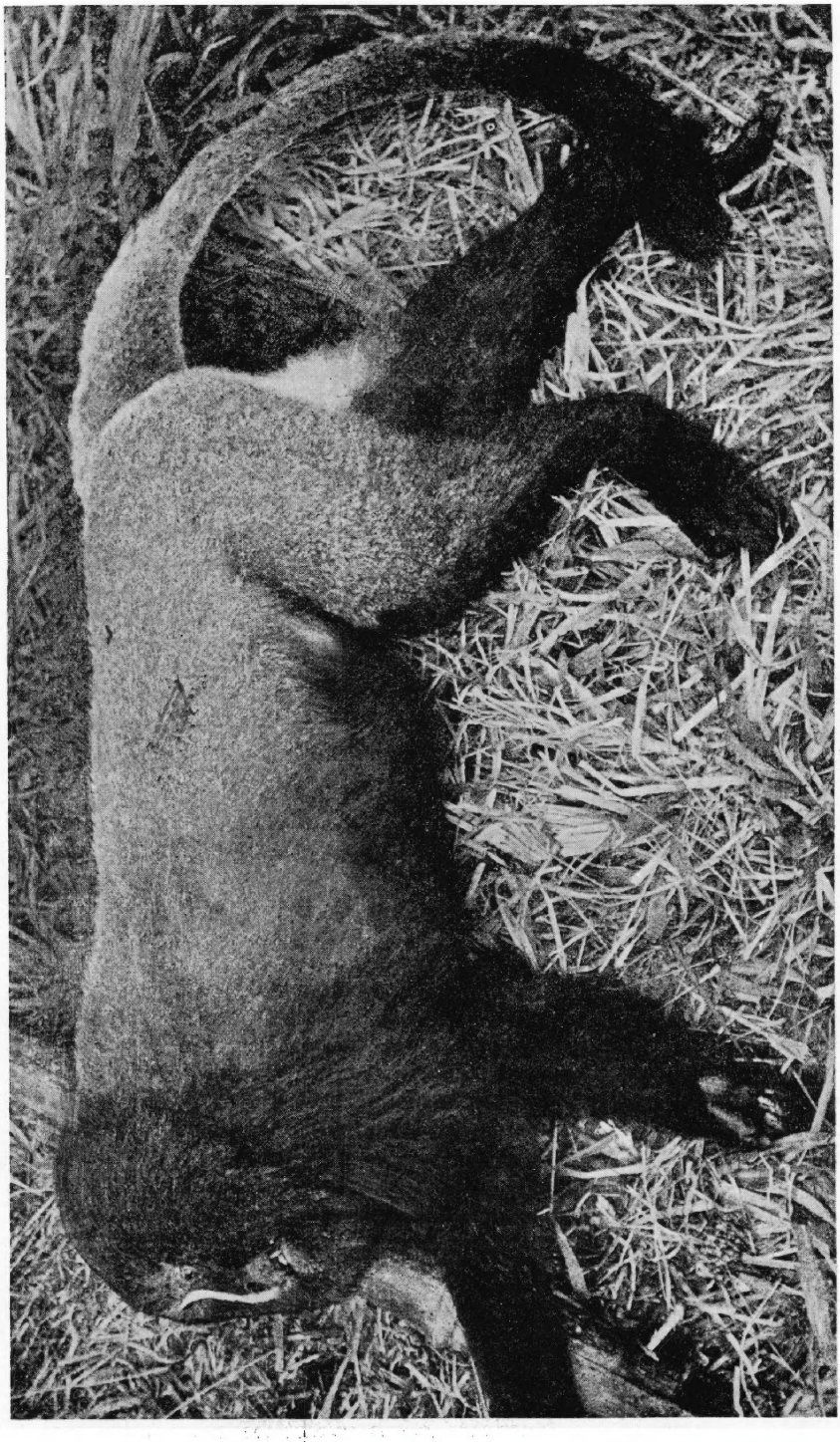

Fig. 1. *Cercopithecus hamlyni* (AMNH 90028), Mt. Kahusi. Photograph by H. C. Raven.

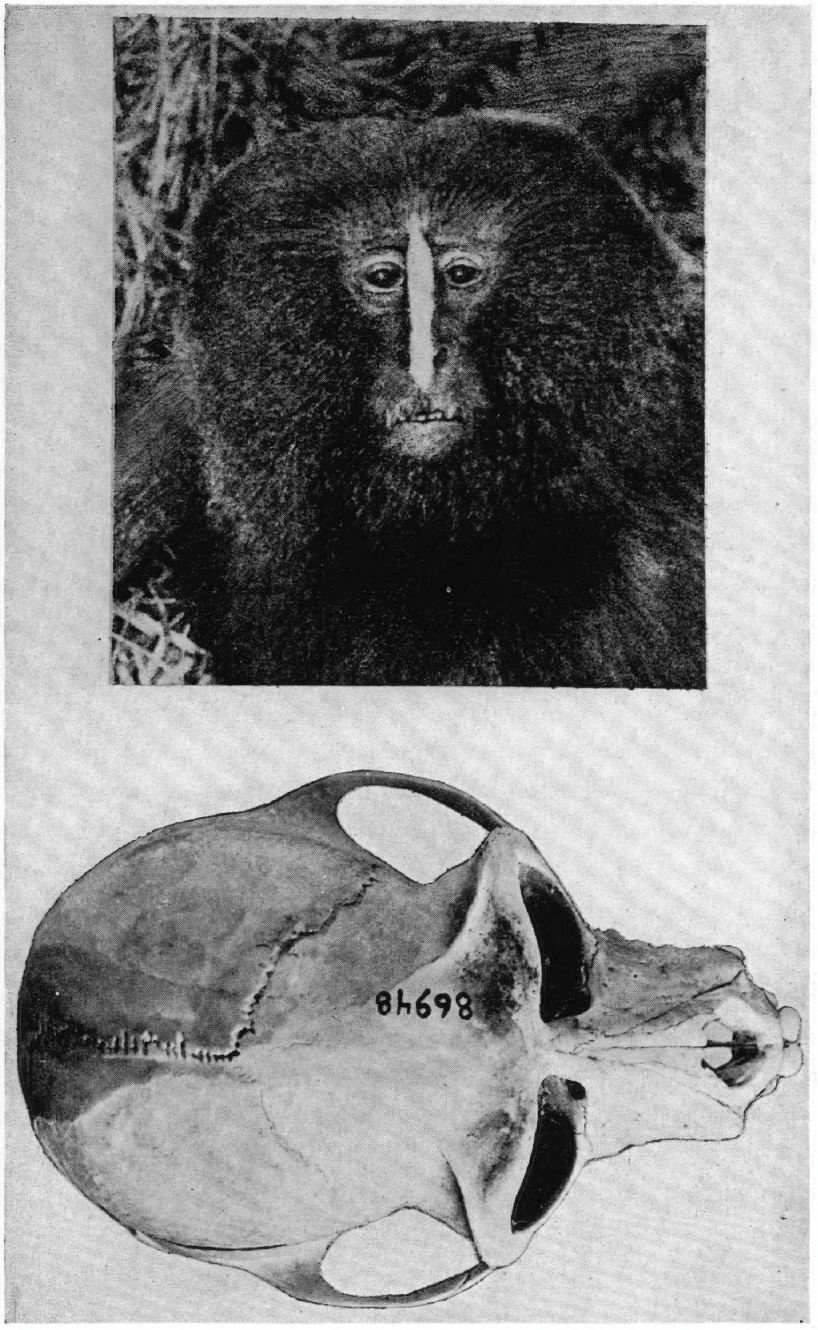

Fig. 2. *Cercopithecus hamlyni* (AMNH 90028). Photograph by H. C. Raven. Skull of *C. hamlyni* (AMNH 86948), circa $^{19}/_{21}$ natural size.

Cercopithecus hamlyni is distinct cranially from other guenons: braincase more rounded and shorter; nasal profile more nearly straight (several skulls of *C. mitis* show this feature); pterygoid fossae deeper and more extensive; incisors, above and below, more slender; cusps of cheek teeth high, connected by sharp ridges (similar to the condition in the Colobidae, but less extreme), cusps placed near margins of molars; first upper premolar subequal with the second (generally smaller in other species), both relatively large; first lower premolar with larger "talon" than in other species (except *C. l'hoesti*); mandible decidedly weaker, with less depth at the third molar.

The skull of *Cercopithecus hamlyni* is of the same general order of magnitude as skulls of *C. diana*, *C. neglectus*, *C. aethiops*, *C. nictitans* (restricted), *C. mitis* and *C. l'hoesti*. It is considerably larger than skulls of *C. cephus*, *C. petaurista*, *C. ascanius*, *C. mona*, *C. pogonias*, and very much larger than *C. talapoin*.

Compared with *Cercopithecus diana* (three adult males, of comparable ages): in addition to differences described above, rostrum in *C. hamlyni* more slender; postorbital constriction more deeply incised; frontal region less elevated above the brow; cheek teeth larger.

Compared with *Cercopithecus neglectus* (15 adult males): skull of *C. hamlyni* smaller than average; rostrum more narrow, less rugose; teeth on the average smaller; brow ridges less pronounced; temporal crests weaker; nasals longer, less expanded anteriorly; braincase higher.

Compared with *Cercopithecus aethiops* (several races, 6 adult males): size larger than average for *aethiops;* braincase broader and shorter. This widely ranging species is variable cranially; it is difficult to characterize, but no skull of *C. aethiops* approaches those of *C. hamlyni*.

Compared with *Cercopithecus nictitans* (*C. n. nictitans* and *C. n. martini*, 7 adult males): postorbital constriction in *C. hamlyni* deeper; cheek teeth broader. *C. nictitans* has usually a strongly concave nasal profile, and the nasals are expanded anteriorly, conditions far removed from those in *C. hamlyni*.

Compared with *Cercopithecus l'hoesti l'hoesti:* rostrum weaker, less squarish than in *C. l'hoesti;* postorbital constriction deeper; frontal less swollen. Only three adult male skulls were available; they are uniform, but a larger series might show individuals that approach *C. hamlyni* more closely than these do.

Compared with *Cercopithecus mitis* (numerous specimens of several races): rostrum weaker; postorbital constriction deeper; frontal usually less elevated. Individual skulls of *C. mitis* may be similar to those of *C. hamlyni* in one or several of the above characters.

Compared with *Cercopithecus cephus* (7 adult males): in addition to being much larger, skull in *C. hamlyni* more prognathous; rostrum relatively more slender; frontal region less swollen and elevated; temporal ridges less developed. In *C. cephus* the cusps of the cheek teeth are low and crowded, quite unlike those of *C. hamlyni*.

Compared with *Cercopithecus ascanius* (30 adult males of several races): in addition to larger size, skull more prognathous than in *C. ascanius;* rostrum more slender; frontal region less swollen and elevated; vomer less emarginate posteriorly; zygomatic arches more rounded, viewed from above. The cheek teeth in *C. ascanius* agree with those in *C. cephus*.

Compared with *Cercopithecus mona* (*C. m. denti*, *C. m. wolfi*, *C. m. nigripes*, 14 adult males): in addition to larger size, skull in *C. hamlyni* more prognathous; frontal region less swollen; vomer less emarginate posteriorly; orbits less rounded; temporal crests closer together. In *C. mona* the cusps of the cheek teeth are similar to those in *C. cephus* and *C. ascanius*, differing widely from the condition of *C. hamlyni*.

On the basis of the material examined, including collections in European museums studied by Hill in 1937, we recognize tentatively the following groups in the genus *Cercopithecus:*

Diana group.—*C. diana diana*, *C. diana roloway*, *C. dryas*.

Neglectus group.—*C. neglectus*.

Aethiops group.—*C. aethiops* with races (as of Schwarz, 1928, Ann. Mag. Nat. Hist., (10) I, pp. 649–663).

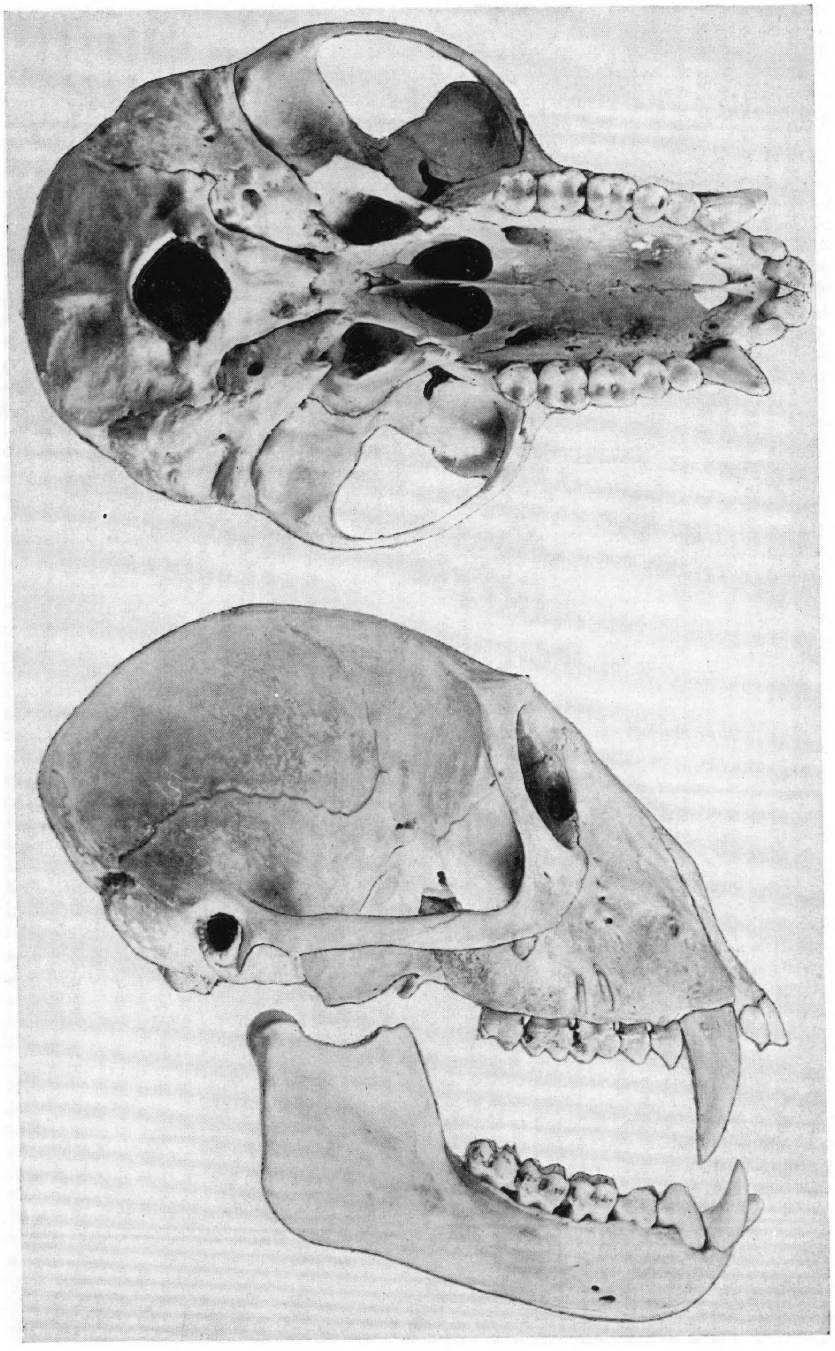

Fig. 3. Skull of *C. hamlyni* (AMNH 86948), circa $^{19}/_{21}$ natural size.

Cephus group.—*C. cephus cephus, C. c. erythrotis; C. petaurista petaurista, C. p. büttikoferi; C. ascanius ascanius, C. a. katangae, C. a. montanus, C. a. schmidti, C. a. cirrhorhinus, C. a. whitesidei; C. erythrogaster; C. signatus* (the last two appear to be of questionable status and may be races of *petaurista*), *C. mona* and races as of Schwarz (*loc. cit.*, but *C. pogonias* with *grayi* and *nigripes* may be specifically distinct); *C. talapoin talapoin, C. t. ansorgei.*

Nictitans group.—*C. nictitans nictitans, C. n. martini.*

L'hoesti group.—*C. l'hoesti l'hoesti, C. l'h. preussi.*

Mitis group.—*C. mitis* with races (*C. leucampyx* of Schwarz, *loc. cit.*).

Hamlyni group.—*C. hamlyni.*

Conceivably, more material will modify this grouping, but we have seen nothing indicative of intergradation between the species here listed.

Cercopithecus hamlyni is a well-marked species; cranially and externally it appears to show most resemblance to *Cercopithecus mitis*. No character discovered in the skull or dentition is considered by us of generic significance.

MEASUREMENTS.—No external measurements are available. The tail, however, appears to be only slightly longer than head and body. Skull (measurements of AMNH 86948 in parentheses): greatest length, 112.0 (109.5); basilar length, 78.0 (75.3); palatilar length, 36.9 (37.7); zygomatic breadth, 74.0 (73.5); rostral breadth at canine, 29.2 (27.1); mastoid breadth, 63.0 (60.9); postorbital constriction, 41.0 (42.3); length braincase, glabella to opisthocranion, circa 74 (72.8); height of braincase, basion to bregma, 48.3 (51.7); length rostrum, orbit to prosthion, 40.2 (39.9); breadth across alveolar borders at M^2–M^2, 34.8 (32.5); length maxillary alveoli, 36.8 (35.2); length M^1, 6.4 (7.0); length M_1, 6.1 (7.1); length M_3, 6.2 (7.3).